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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/930,067	08/15/2001	Shlomo Ovadia	GIC-557.1	2241

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EXAMINER

DESIR, JEAN WICEL

ART UNIT

PAPER NUMBER

2614

DATE MAILED: 06/17/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/930,067

Applicant(s)

OVADIA ET AL.

Examiner

Jean W. Désir

Art Unit

2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 April 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 20 is/are allowed.
- 6) ☒ Claim(s) 16-19 and 21-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

2. Claims 16, 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Pidgeon (5,850,305).

Claim 16:

the claimed “pre-distorting said signal at the transmitter to accentuate the signal magnitude at a known fixed frequency where said nonlinear distortion resides” is disclosed, see Fig. 4 item 401 where the pre-distorted signal occurred at the transmitter - and the fixed frequency is a known fixed frequency, see for instance col. 2 lines 5-18;

the claimed “communicating the pre-distorted signal to said receiver” is disclosed, see Fig. 4 items 402, 403, 404 where this communication happened;

the claimed “and filtering the pre-distorted signal at said receiver to attenuate the signal magnitude at said known fixed frequency, wherein said pre-distorting of said signal at said transmitter compensates for distortion effects caused by said filtering at said receiver” is disclosed, see Fig. 4 items 404-409 where the filtering and compensation occurred.

Claim 19, the apparatus claim 19 is rejected for the same reasons as the method claim 16.

3. **Claim 21** is rejected under 35 U.S.C. 102(e) as being anticipated by Ju et al "METHOD FOR ELIMINATING NARROWBAND SHORTWAVE INTERFERENCE IN UPSTREAM CHANNEL OF HFC", Electronics Letters, 30th April 1998, Vol. 34 No. 9, pages 852-854.

Ju discloses:

"a first notch filter at the transmitter having a first transfer function to provide a pre-distorted signal having an accentuated magnitude at a known fixed frequency fixed frequency where said nonlinear distortion resides", see the **transmitter at Fig. 1** on page 852 where a first notch filter is disclosed as claimed - and the fixed frequency is a known fixed frequency (see page 852, second column, second paragraph);

"a second notch filter at the receiver having a second transfer function adapted to filter the pre-distorted signal to attenuate the signal magnitude at said known fixed frequency fixed frequency", see the **receiver at Fig. 1** on page 852 where a second notch filter is disclosed as claimed;

"wherein said first transfer function is the inverse of said second transfer function", see the **transmitter at Fig. 1** on page 852 where said first transfer function is the inverse of said second transfer function as claimed.

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Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 17, 18, 22, 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pidgeon (5,850,305), and the BACKGROUND OF THE INVENTION.

Claim 17:

the claimed "said CSO and CTB distortions are reduced by pre-distorting said signal at the transmitter to accentuate the signal magnitude at a first fixed frequency where said CSO distortion resides and a second fixed frequency where said CTB distortion resides, and filtering said signal at the receiver at said first and second fixed frequencies" is disclosed, see Fig. 4 as pointed out in the rejection of claim 16, see also col. 5 line 56 to col. 6 line 15 where CSO and CTB distortions are described;

the difference between the claimed invention and Pidgeon's disclosure is that "said signal is an integrally related carrier (IRC) television channel signal having composite second order (CSO) and composite triple beat (CTB) distortions present at different fixed frequencies" is not explicitly disclosed. However, this kind of signal is known in the art – as evidence see the BACKGROUND OF THE INVENTION on page 3 lines 11-16 where known description of this signal is provided. Thus, an artisan would have readily recognized that a modification of the Pidgeon's disclosure in light of this well known feature would not have changed the useful purpose of Pidgeon's disclosure

which is alleviating nonlinear distortion in a signal communicated from a transmitter to a receiver. Therefore, the claimed invention would have been obvious to a person of ordinary skill in the art at the time the invention was made.

Claim 18 is rejected for the same reasons as 17.

Claim 22:

The claimed limitations "said communication path comprises a downstream communication path in a television distribution system; said transmitter is located a television headend; said receiver is associated with a subscriber terminal" are not explicitly disclosed by Pidgeon. However, these claimed limitations are notoriously well known in the art - as evidence see the BACKGROUND OF THE INVENTION on page 1 line 10 to page 2 line 8. Pidgeon's disclosure would have rendered the claimed invention obvious. An artisan would have readily recognized the advantages of a modification of the Pidgeon's disclosure in light of these very well known features to arrive at the claimed invention. Because this modification would result in alleviating nonlinear distortion in a signal communicated from a transmitter to a receiver.

Therefore, the claimed invention would have been obvious to a person of ordinary skill in the art at the time the invention was made.

Claim 23 is rejected for the same reasons as claim 22.

6. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ju et al "METHOD FOR ELIMINATING NARROWBAND SHORTWAVE INTERFERENCE IN UPSTREAM CHANNEL OF HFC", Electronics Letters, 30th April 1998, Vol. 34 No. 9, pages 852-854, and the BACKGROUND OF THE INVENTION.

Claim 24:

The claimed limitations "said communication path comprises a downstream communication path in a television distribution system; said transmitter is located a television headend; said receiver is associated with a subscriber terminal" are not explicitly disclosed, verbatim, by Ju. However, these claimed limitations are notoriously well known in the art - as evidence see the BACKGROUND OF THE INVENTION on page 1 line 10 to page 2 line 8. Ju's disclosure would have rendered the claimed invention obvious. An artisan would have readily recognized the advantages of a modification of the Ju's disclosure in light of these very well known features to arrive at the claimed invention. Because this modification would advantageously result in significantly reducing noise in a television distribution system using hybrid fiber/coax (HFC) network. Therefore, the claimed invention would have been obvious to a person of ordinary skill in the art at the time the invention was made.

Response to Arguments

7. Applicant's arguments filed on Apr. 8, 2002, have been fully considered but are moot in view of reinterpretation of the references necessitated by the amendment.

Allowable Subject Matter

8. **Claim 20** is allowed.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Jean W. Désir** whose telephone number is (703) 308-9571.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **John W. Miller**, can be reached at (703) 305-4795.

11. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

12. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 305 39000377.

JWD
Jun. 14, 02


JOHN MILLER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600